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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,214	01/12/2004	Rajiv Doshi	2502230-991101	1165
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2000 UNIVERSITY AVENUE				
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EXAMINER
MCKANE, ELIZABETH L

ART UNIT	PAPER NUMBER
1744	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,214

Applicant(s)

DOSHI, RAJIV

Examiner

Leigh McKane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 011204.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 8-10, 13, 17-19, 24-26, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Hollander (U.S. Patent No. 5,334,347).

Hollander teaches an HVAC system and method for a motor vehicle comprising a UV bulb **42** for treating microorganisms with the HVAC system. The UV bulb emits light at 254 nm (UVC). See Figure 3. The UV bulb **42** is located in the post-blower (unlabeled) portion of the HVAC system, adjacent and downstream of the evaporator **49B** at the air exit **48**.

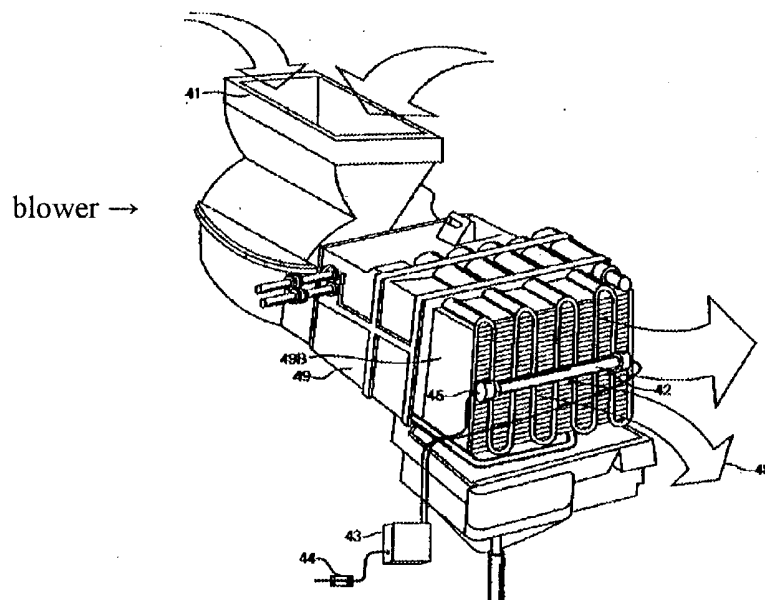


FIG. 4

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander.

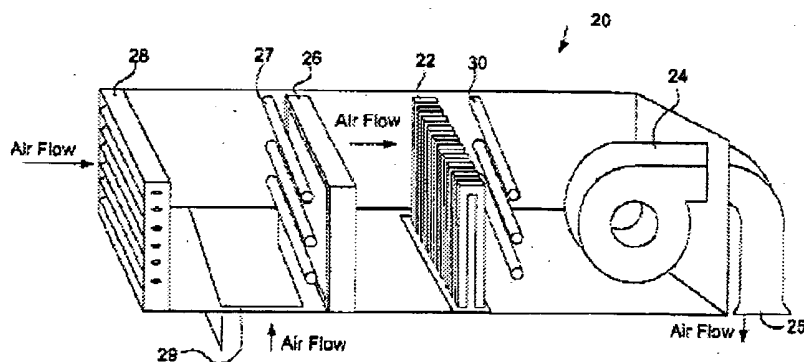
Although Hollander does not expressly teach that the HVAC system has a plurality of conduits for communicating air within the vehicle, it is well-known in the art that the HVAC systems of motor vehicles have a plurality of conduits, evidenced by the multiple air vents within a vehicle interior. Moreover, Hollander discloses that the interior of the air duct “is reflective of the ultraviolet energy (254 nm)” in order to direct the UV radiation throughout the duct and to intensify sterilization effects. See col.7, lines 34-39. For this reason, it would have been obvious to fabricate the interior of all air ducts of a reflective material.

6. Claims 4, 5, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander in view of Lentz et al (U.S. Pub. No. 2003/0099569).

Hollander fails to teach a controller for selectively activating and deactivation the UV lamp. Lentz et al, however, discloses a controller **28** for an ultraviolet air treatment device **26** located within an HVAC air duct **24**. The controller **28** activates and deactivates the UV device based upon the operation state of the air handling system **22**. For example, the controller can receive information from an airflow sensor, thermostat, timer, etc., and based upon the information can activate or deactivate the lamp. See page 3, paragraph [0019] and Figures 1-3. As Lentz et al teaches that activating and deactivating the lamp based upon monitored parameters can extend the useful life of the lamp (paragraph [0006], it would have been an obvious modification to the system of Hollander.

7. Claims 6, 7, 11, 12, 22, 23, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander in view of Elder et al (U.S. Pub. No. 2004/0086422).

The UV light source **42** of Hollander is not located within the air inlet or post evaporator/heater and pre-blower portion of the HVAC system. Elder et al discloses a UV



disinfecting system for an HVAC system wherein UV lamps **27,30** are placed at both the air inlet **29** and in the post-evaporator/ heater **22** and pre-blower **24** portion of the

HVAC system. Elder et al teaches that both locations are potential sources of biological agents

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(paragraph [0025]). For this reason, one of ordinary skill in the art would have found it obvious to place UV lamps both upstream and downstream of the evaporators, or wherever biological matter is likely to exist. Note that Hollander teaches that UV lamps can be placed in either location. See col.7, lines 41-44.

8. Claims 14 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander in view of Fencel et al (U.S. Patent No. 5,817,276).

Hollander teaches disposing the UV source **42** proximate an evaporator coil **49**, but does not teach a drain pan. Fencel et al evidences that HVAC evaporator coils **135** have a drain pan **140** for collecting condensate. As Fencel et al teaches that the moisture in drain pans support biological growth, it would have been obvious to use the UV lamp of Hollander to irradiate the drain pan, as well as the evaporator coil.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander in view of Broomfield (U.S. Patent No. 4,857,277).

Although Hollander does not expressly teach that the HVAC system has a plurality of conduits for communicating air within the vehicle, it is well-known in the art that the HVAC systems of motor vehicles have a plurality of conduits, evidenced by the multiple air vents within a vehicle interior. Furthermore, Hollander fails to teach a UV absorbent interior surface for the air ducts. However, Broomfield teaches an ozone generator that uses UV radiation to generate the ozone. Broomfield discloses that UV radiation is dangerous to humans and animals and can cause skin or eye damage (col.1, lines 27-31). As a result, Broomfield employs ducts painted or coated with a black material, absorbent of UV radiation. See col.2, lines 15-17 and claim 4. In

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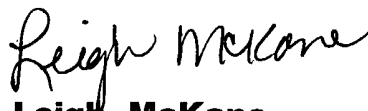
order to prevent injury to vehicle occupants, it would have been obvious to coat the internal duct surfaces with a UV absorbent material, in the manner of Broomfield.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Wednesday (7:15 am-4:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 571-272-1275. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leigh McKane
Primary Examiner
Art Unit 1744

elm

11 January 2005